NOVEL POLYAMINE ANALOGUES AS THERAPEUTIC AND DIAGNOSTIC AGENTS

RELATED APPLICATIONS

of U.S.S.N. 09/341,408, filed 8 September 1999, now U.S. Patent No. 6172261,

This is a continuation-in-part of PCT/US98/14896 filed July 15, 1998, which claims benefit of priority from U.S. Provisional Applications 60/052,586, filed July 15, 1997; 60/065,728, filed November 14, 1997; and 60/085,538, filed May 15, 1998; all of which are hereby incorporated by reference as if fully set forth.

FIELD OF THE INVENTION

The invention in the field of chemistry and biochemistry relates to the synthesis and use of novel polyamine transport (PAT) inhibitor compounds with pharmacological or agricultural uses and as probes for biochemical assays or for purification of selected polyamine binding targets. As drugs, these compounds are used to treat disorders of undesired cell proliferation, primarily cancer, alone or combined with other agents such as polyamine synthesis inhibitors.

The invention also relates to the synthesis and use of such novel polyamines as part of combinatorial libraries. These libraries are used to discover compositions that inhibit PAT and/or that bind to a cellular polyamine transporter (PATr). Various members of these libraries or compounds discovered through use of the libraries have utility as drugs, agricultural chemicals, and as probes.

BACKGROUND OF THE INVENTION

Decades of research on the myriad of biological activities that the polyamines, putrescine, spermidine and spermine play in cellular processes have shown the profound role they play in life (Cohen, S.S., "A Guide to the Polyamines" **1998**, Oxford University Press, New York). As polycations at physiological pH, they bind tightly to and strongly modulate the biological activities of all of the anionic cellular components. Specific and strong interactions have been associated with DNA and